



# SAFETY DATA SHEETS

According to the UN GHS revision 9

Version: 1.0  
Creation Date: July 15, 2019  
Revision Date: July 15, 2019

## SECTION 1: Identification

### 1.1 GHS Product identifier

Product name Hexan-2-one

### 1.2 Other means of identification

Product number -  
Other names 2-Hexanone; Hexanone-2; MBK

### 1.3 Recommended use of the chemical and restrictions on use

Identified uses Industrial and scientific research use.  
Uses advised against no data available

### 1.4 Supplier's details

Company Shanghai Yien Chemical Technology Co., Ltd  
Address Building 6, 28 Yingong Road, Fengxian District, Shanghai  
Chemical Industry Zone, Shanghai, 201400, China  
Telephone +86-400-133-2688

### 1.5 Emergency phone number

Emergency phone number +86-400-133-2688  
Service hours Monday to Friday, 9am-5pm (Standard time zone: UTC/GMT +8 hours).

## SECTION 2: Hazard identification

### 2.1 Classification of the substance or mixture

Flammable liquids, Category 3  
Specific target organ toxicity – single exposure, Category 3  
Specific target organ toxicity – repeated exposure, Category 1  
Reproductive toxicity, Category 2

### 2.2 GHS label elements, including precautionary statements

Pictogram(s)



Signal word Danger  
Hazard statement(s) H226 Flammable liquid and vapour  
H336 May cause drowsiness or dizziness

H372 Causes damage to organs through prolonged or repeated exposure

**Precautionary statement(s)**

**Prevention**

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
P233 Keep container tightly closed.  
P240 Ground and bond container and receiving equipment.  
P241 Use explosion-proof [electrical/ventilating/lighting/...] equipment.  
P242 Use non-sparking tools.  
P243 Take action to prevent static discharges.  
P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...  
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.  
P271 Use only outdoors or in a well-ventilated area.  
P260 Do not breathe dust/fume/gas/mist/vapours/spray.  
P264 Wash ... thoroughly after handling.  
P270 Do not eat, drink or smoke when using this product.  
P203 Obtain, read and follow all safety instructions before use.

**Response**

P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse affected areas with water [or shower].  
P370+P378 In case of fire: Use ... to extinguish.  
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
P319 Get medical help if you feel unwell.

**Storage**

P318 IF exposed or concerned, get medical advice.  
P403+P235 Store in a well-ventilated place. Keep cool.  
P403+P233 Store in a well-ventilated place. Keep container tightly closed.  
P405 Store locked up.

**Disposal**

P501 Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

## 2.3 Other hazards which do not result in classification

no data available

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## SECTION 3: Composition/information on ingredients

### 3.1 Substances

Chemical name	Common names and synonyms	CAS number	EC number	Concentration
Hexan-2-one	Hexan-2-one	591-78-6	209-731-1	100%

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## SECTION 4: First-aid measures

### 4.1 Description of necessary first-aid measures

**If inhaled**

Fresh air, rest. Refer for medical attention.

**Following skin contact**

Remove contaminated clothes. Rinse and then wash skin with water and soap. Refer for medical attention .

**Following eye contact**

First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then refer for medical attention.

**Following ingestion**

Rinse mouth. Do NOT induce vomiting. Refer for medical attention .

## **4.2 Most important symptoms/effects, acute and delayed**

Inhalation of high concentrations of vapor may result in narcosis; peripheral neuropathy may develop. Ingestion of large amounts may cause some systemic injury. Contact with eyes causes mild to moderate irritation. Liquid irritates skin; prolonged or repeated contact may cause defatting of the skin with resultant dermatitis. (USCG, 1999)

## **4.3 Indication of immediate medical attention and special treatment needed, if necessary**

An accurate history is essential to determine whether a person has been exposed to /2-hexanone/. ...Patient may report weakness, muscle cramps, numbness, and paresthesias such as the feeling of tingling, burning, and freezing. Impotence may occur. The physical examination should examine all muscle groups for weakness. Peripheral muscles are affected first, with more proximal weakness after more prolonged exposure. Muscle stretch reflexes are absent distally in areas of weakness. Atrophy of the hand muscles has been reported. Hyperhidrosis may occur. All sensory modalities may be affected, including touch and proprioception. Patients should be assessed for cerebellar signs and tremor. Visual acuity and peripheral vision changes have not been reported, whereas blurred vision has. Tinnitus may occur. Signs of parkinsonism should be sought. ...The patient must be removed from all future exposure. Physical therapy should be initiated to maintain full range of motion until reinnervation occurs. Recovery is slow, as the regeneration of axon fibers must take place. Complete recovery of strength may not occur.

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## **SECTION 5: Fire-fighting measures**

### **5.1 Suitable extinguishing media**

If material is on fire or involved in fire: Do not extinguish fire unless flow can be stopped. Use water in flooding quantities as fog. Solid streams of water may spread fire. Cool all affected containers with flooding quantities of water. Apply water from as far a distance as possible. Use "alcohol" foam, dry chemical or carbon dioxide.

### **5.2 Specific hazards arising from the chemical**

This chemical is flammable. (NTP, 1992)

### **5.3 Special protective actions for fire-fighters**

Use alcohol-resistant foam, powder, carbon dioxide. In case of fire: keep cylinder cool by spraying with water.

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## **SECTION 6: Accidental release measures**

### **6.1 Personal precautions, protective equipment and emergency procedures**

Personal protection: self-contained breathing apparatus. Collect leaking and spilled liquid in sealable containers as far as possible. Absorb remaining liquid in sand or inert absorbent. Then store and dispose of according to local regulations.

### **6.2 Environmental precautions**

Personal protection: self-contained breathing apparatus. Collect leaking and spilled liquid in sealable containers as far as possible. Absorb remaining liquid in sand or inert absorbent. Then store and dispose of according to local regulations.

### **6.3 Methods and materials for containment and cleaning up**

Environmental considerations -- land spill: Dig a pit, pond, lagoon, holding area to contain liquid or solid material. /SRP: If time permits, pits, ponds, lagoons, soak holes, or holding areas should be sealed with an impermeable flexible membrane liner./ Dike surface flow using soil, sand bags, foamed polyurethane, or foamed concrete. Absorb bulk liquid with fly ash, cement powder, or commercial sorbents.

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## **SECTION 7: Handling and storage**

### **7.1 Precautions for safe handling**

NO open flames, NO sparks and NO smoking. Above 23°C use a closed system, ventilation and explosion-proof electrical equipment. Handling in a well ventilated place.

Wear suitable protective clothing. Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Use non-sparking tools. Prevent fire caused by electrostatic discharge steam.

## 7.2 Conditions for safe storage, including any incompatibilities

Fireproof. Separated from strong oxidants. MATERIALS WHICH ARE TOXIC AS STORED OR WHICH CAN DECOMPOSE INTO TOXIC COMPONENTS ... SHOULD BE STORED IN A COOL WELL VENTILATED PLACE, OUT OF THE DIRECT RAYS OF THE SUN, AWAY FROM AREAS OF HIGH FIRE HAZARD, AND SHOULD BE PERIODICALLY INSPECTED. INCOMPATIBLE MATERIALS SHOULD BE ISOLATED ...

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## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

#### Occupational Exposure limit values

TLV: 5 ppm as TWA; 10 ppm as STEL; (skin); BEI issued. MAK: 21 mg/m<sup>3</sup>, 5 ppm; peak limitation category: II(8); skin absorption (H)

#### Biological limit values

no data available

### 8.2 Appropriate engineering controls

Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Set up emergency exits and the risk-elimination area.

### 8.3 Individual protection measures, such as personal protective equipment (PPE)

#### Eye/face protection

Wear face shield or eye protection in combination with breathing protection.

#### Skin protection

Protective gloves. Protective clothing.

#### Respiratory protection

Use ventilation, local exhaust or breathing protection.

#### Thermal hazards

no data available

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## SECTION 9: Physical and chemical properties and safety characteristics

<b>Physical state</b>	Methyl butyl ketone is a clear colorless liquid. Flash point 95°F. Less dense than water. Vapors heavier than air.
<b>Colour</b>	Colorless liquid
<b>Odour</b>	Characteristic acetone like odor, but more pungent
<b>Melting point/freezing point</b>	-57°C(lit.)
<b>Boiling point or initial boiling point and boiling range</b>	127°C
<b>Flammability</b>	Class IC Flammable Liquid: F1.P. at or above 73°F and below 100°F.
<b>Lower and upper explosion limit/flammability limit</b>	Lower flammable limit: 1.2% by volume; Upper flammable limit: 8% by volume
<b>Flash point</b>	23°C(lit.)
<b>Auto-ignition temperature</b>	795° F (USCG, 1999)

<b>Decomposition temperature</b>	no data available
<b>pH</b>	no data available
<b>Kinematic viscosity</b>	0.62 cP at 20 deg C
<b>Solubility</b>	10 to 50 mg/mL at 72° F (NTP, 1992)
<b>Partition coefficient n-octanol/water</b>	log Kow = 1.38
<b>Vapour pressure</b>	10 mm Hg ( 39 °C)
<b>Density and/or relative density</b>	0.81
<b>Relative vapour density</b>	3.45 (NTP, 1992) (Relative to Air)
<b>Particle characteristics</b>	no data available

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## SECTION 10: Stability and reactivity

### 10.1 Reactivity

Reacts violently with oxidants. This generates fire and explosion hazard. Attacks plastics.

### 10.2 Chemical stability

no data available

### 10.3 Possibility of hazardous reactions

Dangerous fire and explosion hazard when exposed to heat or flame ...METHYL BUTYL KETONE is incompatible with oxidizing agents. It may also react with strong bases and reducing agents. (NTP, 1992)

### 10.4 Conditions to avoid

no data available

### 10.5 Incompatible materials

Strong oxidizers.

### 10.6 Hazardous decomposition products

no data available

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## SECTION 11: Toxicological information

### Acute toxicity

- Oral: LD50 Rat oral 2.59 g/kg
- Inhalation: no data available
- Dermal: no data available

### Skin corrosion/irritation

no data available

### Serious eye damage/irritation

no data available

### Respiratory or skin sensitization

no data available

### Germ cell mutagenicity

no data available

### Carcinogenicity

EPA-1

### Reproductive toxicity

no data available

#### **STOT-single exposure**

The substance is irritating to the eyes and respiratory tract. The substance may cause effects on the nervous system. Exposure far above the OEL could cause unconsciousness.

#### **STOT-repeated exposure**

Repeated or prolonged contact with skin may cause dermatitis. The substance may have effects on the nervous system.

#### **Aspiration hazard**

A harmful contamination of the air can be reached rather quickly on evaporation of this substance at 20°C, on spraying or dispersing much faster.

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## **SECTION 12: Ecological information**

### **12.1 Toxicity**

- Toxicity to fish: LC50 Pimephales promelas (Fathead minnow, 31 days old) 428 mg/L/96 hr at 25 deg C (99+% purity), flow-through bioassay.
- Toxicity to daphnia and other aquatic invertebrates: no data available
- Toxicity to algae: no data available
- Toxicity to microorganisms: no data available

### **12.2 Persistence and degradability**

AEROBIC: Biodegradation is expected to be an important fate process for this compound(1). Using an acclimated mixed microbial culture seed, a 59% theoretical biological oxygen demand for 2-hexanone was obtained after five days(2). In a five day test using an activated microbial culture, 2-hexanone consumed 61.4% of its theoretical oxygen demand(4).

### **12.3 Bioaccumulative potential**

An estimated BCF of 2 was calculated for 2-hexanone(SRC), using a log Kow of 1.38(1) and a regression-derived equation(2). According to a classification scheme(3), this BCF suggests the potential for bioconcentration in aquatic organisms is low(SRC).

### **12.4 Mobility in soil**

The Koc of 2-hexanone is estimated as 134(SRC), using a log Kow of 1.38(1) and a regression-derived equation(2). According to a classification scheme(3), this estimated Koc value suggests that 2-hexanone is expected to have high mobility in soil.

### **12.5 Other adverse effects**

no data available

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## **SECTION 13: Disposal considerations**

### **13.1 Disposal methods**

#### **Product**

The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

#### **Contaminated packaging**

Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.

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## **SECTION 14: Transport information**

### **14.1 UN Number**

ADR/RID: UN1224 (For reference only, please check.)

IMDG: UN1224 (For reference only, please check.)

IATA: UN1224 (For reference only, please check.)

## 14.2 UN Proper Shipping Name

ADR/RID: KETONES, LIQUID, N.O.S. (For reference only, please check.)

IMDG: KETONES, LIQUID, N.O.S. (For reference only, please check.)

IATA: KETONES, LIQUID, N.O.S. (For reference only, please check.)

## 14.3 Transport hazard class(es)

ADR/RID: 3 (For reference only, please check.)

IMDG: 3 (For reference only, please check.)

IATA: 3 (For reference only, please check.)

## 14.4 Packing group, if applicable

ADR/RID: II (For reference only, please check.)

IMDG: II (For reference only, please check.)

IATA: II (For reference only, please check.)

## 14.5 Environmental hazards

ADR/RID: No

IMDG: No

IATA: No

## 14.6 Special precautions for user

no data available

## 14.7 Transport in bulk according to IMO instruments

no data available

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# SECTION 15: Regulatory information

## 15.1 Safety, health and environmental regulations specific for the product in question

Chemical name	Common names and synonyms	CAS number	EC number
Hexan-2-one	Hexan-2-one	591-78-6	209-731-1
European Inventory of Existing Commercial Chemical Substances (EINECS)			Listed.
EC Inventory			Listed.
United States Toxic Substances Control Act (TSCA) Inventory			Listed.
China Catalog of Hazardous chemicals 2015			Listed.
New Zealand Inventory of Chemicals (NZIoC)			Listed.
Philippines Inventory of Chemicals and Chemical Substances (PICCS)			Listed.
Vietnam National Chemical Inventory			Listed.
Chinese Chemical Inventory of Existing Chemical Substances (China IECSC)			Listed.
Korea Existing Chemicals List (KECL)			Listed.

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# SECTION 16: Other information

### Information on revision

Creation Date July 15, 2019

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### Abbreviations and acronyms

- CAS: Chemical Abstracts Service
- ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
- RID: Regulation concerning the International Carriage of Dangerous Goods by Rail
- IMDG: International Maritime Dangerous Goods
- IATA: International Air Transportation Association

- TWA: Time Weighted Average
- STEL: Short term exposure limit
- LC50: Lethal Concentration 50%
- LD50: Lethal Dose 50%
- EC50: Effective Concentration 50%

## References

- IPCS - The International Chemical Safety Cards (ICSC), website: <http://www.ilo.org/dyn/icsc/showcard.home>
- HSDB - Hazardous Substances Data Bank, website: <https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm>
- IARC - International Agency for Research on Cancer, website: <http://www.iarc.fr/>
- eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website: [http://www.echemportal.org/echemportal/index?pageID=0&request\\_locale=en](http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en)
- CAMEO Chemicals, website: <http://cameochemicals.noaa.gov/search/simple>
- ChemIDplus, website: <http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp>
- ERG - Emergency Response Guidebook by U.S. Department of Transportation, website: <http://www.phmsa.dot.gov/hazmat/library/erg>
- Germany GESTIS-database on hazard substance, website: <http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp>
- ECHA - European Chemicals Agency, website: <https://echa.europa.eu/>

## Other Information

Use of alcoholic beverages enhances the harmful effect. MBK potentiates the toxicity of some other chemical substances like chloroform, carbon tetrachloride, ethanol. Depending on the degree of exposure, periodic medical examination is suggested.

**Any questions regarding this SDS, Please send your inquiry to [sds@xixisys.com](mailto:sds@xixisys.com)**

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*Disclaimer: The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. We as supplier shall not be held liable for any damage resulting from handling or from contact with the above product.*